

Lewis and Clark Corps of Discovery II

Commemorative Marker Installation and Dedication

Site Selection And Mark Setting Requirements:

The site selection should conform to the following criteria as much as possible:

1. In the vicinity of a major Lewis and Clark Expedition historic site.
2. A "GPS-able" site (e.g., clear of obstructions 15° above the horizon).
3. Located on a publicly accessible site and highly visible by the general public.
(City, town, county, state or national park, Lewis and Clark historic wayside, etc.)
4. Permanence and longevity, safety of access, coordination with park designs and plans.
5. Stability of the monument. This will become a "Special Status" A-Order control station.

Once a suitable location has been selected for the commemorative station, the mark should be set in accordance with "General Specifications for Aeronautical Surveys," Attachment 7-9 as listed at <http://www.ngs.noaa.gov/AERO/Supinst.html>. The 12" markers will require special consideration when establishing the monument allowing for the larger diameter disk. Station stability as well as pleasing appearance must be considered when designing the monument.

Given the unique nature of this project, NGS will provide the special 12" brass commemorative mark for each of the 15 designated Lewis and Clark Bicentennial Signature Event sites and a 4" bronze commemorative survey mark for other Lewis and Clark historical sites. Other size Lewis and Clark Corps of Discovery II official logo commemorative disks, such as 6", 8", 10" or 12" disks and the 3.5" paperweight, can be purchased through **Berntsen International** www.berntsen.com (1-800-356-7388) at the discretion of the setting Association/Society. The costs of the survey marks, other than the 4" or 12" survey markers supplied by NGS, will be the responsibility of the State Survey Association/Society.

GPS Equipment And Observation Requirements:

All observations must be performed using dual-frequency, full-wavelength GPS receivers. All antennas must be of a make and model that have been calibrated by NGS - see: <http://www.ngs.noaa.gov/ANTCAL>

Fixed height GPS tripods (quadpods) are highly recommended, but not required. If fixed height poles are not used, special effort should be made to ensure an accurate height of the GPS antenna is measured at the start and end of each session. These measurements should be recorded and diagrammed on the "Illustration for Antenna Height Measurements" page of the GPS observation log sheet described below.

GPS network design will include 3 CORS and/or HARN stations. If there are 3 CORS within 300 km, then there is no requirement for connections to HARN stations. However, it is recommended that at least 1 HARN and 1 North American Vertical Datum of 1988 (NAVD 88) bench mark (BM) published by NGS and within 50 km of the commemorative marker also be observed. If convenient the HARN station and the BM should be the same station.

GPS observations at the commemorative marker will consist of 3 separate sessions of 5.5 hours duration with the start time of one session offset from the other 2 by at least 4 hours. In other words, if 2 of the sessions start at 9:00 am the third session needs to start no earlier than 1:00 pm. Sessions

do not all need to be on separate days (i.e., 2 sessions can be on the same day which would also satisfy the requirement for 1 session with a start time later than 4 hours).

If there are not 3 CORS within 300 km, then the observations at the HARN station(s) should be coincident with all commemorative marker observations. If a separate BM tie is performed it should be at least a single 4 hours session coincident with the observations at the commemorative marker. It is recommended but not required that there be 2 separate sessions of 4 hours duration to the BM. A separate NGS GPS observation log sheet, visibility obstruction diagram, and station description/recovery form must be completed for each station in the project. GPS observation log sheets must be completed for each session. Copies of all forms with examples can be found at: <http://www.ngs.noaa.gov/PROJECTS/FBN/>

Data Processing Requirements:

GPS data observed at all stations should be processed through the OPUS GPS processing website: <http://www.ngs.noaa.gov/OPUS/index.html>. Submit data to OPUS no sooner than 24 hours after each observation to allow for the more precise ephemeris to be used in the solution.

Deliverables:

For the data to be "Blue-Booked", the following data must be submitted to NGS:

1. All GPS data files in RINEX format.
2. Copy of OPUS output.
3. Original observation log sheets for each station and session occupied.
4. Visibility diagrams of each station occupied.
5. NGS style station description of the commemorative marker.
6. Station recovery notes and updated descriptions for each station occupied.
7. 4 to 5 digital photos clearly showing the monument and the surrounding area.
8. A brief report describing the project, including the site selection, personnel involved and equipment used. Report can be provided in either Microsoft Word (.doc) or Corel WordPerfect (.wpd) format.

All data should be sent to:

Stephen Randall
NOAA, National Geodetic Survey
SSMC3, Station 9460
1315 East-West Highway
Silver Spring, MD 20910
Phone: 301-713-3225 ext.117
E-Mail: Stephen.Randall@noaa.gov

Site Dedication:

There are several approaches for site dedications that may be followed and are primarily left to the discretion and budgeting of the setting agency. Remember, this commemorative is not only to spotlight the extraordinary efforts achieved by the Corps' Expedition but is also the bicentennial surveyor's efforts in the state. Scheduling and other related Lewis and Clark Corps of Discovery II information can be found on the NGS web site at <http://www.ngs.noaa.gov/LewisAndClark/>.

The first is the semi-informal dedication of the site by the Survey Association/Society when setting the monument. Volunteers from the Association/Society may choose to dedicate their efforts through any means they feel relevant to commemorating their participation in this event, through picnics, dinners, the media, speeches, etc.

The second is the formal dedication, typically after the marker has been set, where others are invited. The Association/Society may invite city, town, county, state and federal representatives and officials along with the media to the more formal site dedications. Again, design and plans for the formal site dedications are primarily left to the discretion and budgeting of the Surveying Association/Society.

The Signature Event sites will also be formally dedicated during the bicentennial activities determined for each site in the “Tent of Many Voices” that will accompany the events. Representatives from the Association/Society will be encouraged to participate in this activity along with representatives of the National Geodetic Survey, Bureau of Land Management, U.S. Geologic Survey, etc.